

April 3, 1973  
Preliminary Copy  
University of Idaho  
Soil Conservation Service

Tilma Silt Loam 64 Ida 0502

#### General Site Characteristics

Location--Benewah County, Idaho, 560 feet west and 560 feet south of N.E. corner section 25, T. 45 N., R. 6 W.; described--September 9, 1964 by Jack Chugg and Moore; topography--high terrace, slightly concave, 7 percent slope; elevation--2580 feet; aspect--south southeast; parent material--loess; drainage--moderately well; erosion--slight; vegetation or use--lentils, clover, alfalfa; classification--Typic Palexerolls, fine montmorellonitic, mesic.

#### Pedon Description

Ap 0-8 inches. Dark grayish brown (10YR 4/1.6) silt loam, very dark brown (10YR 2/1.8) moist; weak very fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; non-calcareous; abundant micro and very fine and few fine roots; many micro and very fine interstitial pores; some bleached silt grains; abrupt smooth boundary.

A'2 8-14 inches. Dark grayish brown (10YR 3.6/2) broken, silt loam, very dark brown (10YR 2/2) broken, moist; weak medium to fine subangular blocky structure; hard, friable, slightly sticky, slightly plastic; non-calcareous; plentiful micro and very fine roots; many micro and very fine tubular pores; some bleached silt grains; clear smooth boundary.

14-21 inches. Dark grayish brown (10YR 4/1.6) broken, silt loam, dark brown (10YR 2.6/2.6) broken, moist, dark gray brown (10YR 4/2.4) crushed, moist; weak medium prismatic to weak medium subangular blocky structure; very hard, friable, sticky, plastic; non-calcareous; plentiful micro and very fine roots; many micro and very fine tubular and common very fine interstitial pores; organic stains and many bleached silt grains; abrupt smooth boundary.

A'21 + A'22 21-23.5 inches. A'21 portion: pale brown (10YR 5.6/3) broken, silt loam, dark yellowish brown (10YR 3.6/3.6) broken, moist, dark grayish brown (10YR 4/2.4) crushed, moist; weak medium prismatic to weak medium subangular blocky; hard, friable, slightly sticky, slightly plastic; non-calcareous; plentiful micro and very fine roots; many micro and very fine tubular and common very fine interstitial pores; many bleached silt and sand grains; some small black hard concretions; abrupt smooth boundary. A'22 portion: light gray (10YR 7/2) broken, silt loam, dark grayish brown (10YR 4/2) broken, moist, dark grayish brown (10YR 4/2.4) crushed, moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; non-calcareous; plentiful micro and very fine roots; few micro and very fine pores; few fine concretions; abrupt smooth boundary.

B'21t 23.5-30 inches. Brown (7.5YR 5/3) broken, pale brown (10YR 6/3.4) crushed, silty clay, dark brown (7.5YR 3.6/3) broken, moist; moderate to strong medium to coarse prismatic to weak medium to coarse subangular blocky structure; extremely hard, extremely firm, very sticky, very plastic; non-calcareous; few micro and very fine roots in peds; many micro and very fine tubular pores; medium continuous clay films on vertical and horizontal pore faces; many small black and brown concretions; abrupt smooth boundary.

B'22t 30-34 inches. Brown (9YR 5/3) broken, light yellowish brown (10YR 6/4) crushed, silty clay loam, brown (7.5YR 4.6/3) broken, moist, brown (7.5YR 4.6/3) crushed, moist; moderate medium prismatic structure; very hard, very firm, very sticky, very plastic; non-calcareous; few micro roots; common micro and very fine pores; medium continuous clay films in vertical and horizontal pore faces; abrupt smooth boundary.

B'23t 34-42 inches. Brown (9YR 5/3) broken, light yellowish brown (10YR 6/4) crushed, silty clay loam, brown to dark brown (7.5YR 4/3) interior, moist, brown (7.5YR 4.8/3) crushed, moist, very dark brown (10YR 2/2) clay film, moist, dark brown (10YR 3/3) clay film, broken, moist; strong medium subangular blocky structure; very hard, firm, sticky, plastic; non-calcareous; few micro roots, many micro and very fine tubular pores; medium continuous clay films in vertical and horizontal pore faces; many concretions larger than 1mm and some larger than 2mm; abrupt smooth boundary.

B'3t 42-64 inches. Light yellowish brown (10YR 6/4) broken, very pale brown (10YR 7/3.4) crushed, silt loam, yellowish brown (10YR 4.6/4) broken, moist, brown to dark brown (10YR 4/3) crushed, moist; moderate medium prismatic to strong medium to fine subangular blocky structure; extremely hard, extremely firm, slightly sticky, slightly plastic; non-calcareous; common micro and very fine tubular pores; medium continuous clay films in pores; many black concretions.

Chemical characterization and physical analysis of profile

64 Ida 0502  
Tilma

No.	Horizon	Depth in.	pH Paste	pH 1:5	ECx10 <sup>3</sup>	Saturation extract me/1000 gms soil							
						Ca	Mg	Na	K	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>
1	Ap	0-8	6.05		.25								
2	A12	8-14	6.10		.30								
3	B2	14-21	6.15		.30								
4	A' 21&A' 22	21-23.5	6.40		.25								
5	B''21t	23.5-30	6.00		.25								
6	B' 22t	30-34	6.10		.27								
7	B; 23t	34-42	6.10		.28								
8	B' 3t	42-64	6.80		.22								

Exchangeable ions me/100 gms					C.E.C. meq/100	Base Sat.%	Gyp.	CaCO <sub>3</sub>	E.S.P.	O.M. %	N %	C:N	Soil:Rx ratio
Ca	Mg	Na	K	H									
10.3	2.7	.1	.6	6.5	17.9	67.7				2.40	.121	11.4	
11.5	3.2	.2	.5	7.0	21.8	68.6				2.05	.114	10.4	
11.1	3.4	.3	.6	6.1	21.4	71.6				1.27	.079	9.4	
8.8	2.7	.3	.3	2.6	14.5	82.1				.53	.043	7.2	
18.3	6.9	.3	.4	7.2	33.9	78.4				.60	.043	8.1	
15.8	6.7	.3	.3	5.7	31.4	80.2				.29	.029	5.9	
22.3	8.0	.8	.4	8.0	40.2	79.7				.24	.026	5.4	
17.5	5.9	.7	.2	6.1	29.5	80.0				.14	.020	4.0	

$$\%C = \frac{\%OM}{1.72}$$

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Date: November 17, 1969

No.	Particle size distribution (mm) (percent)								Gravel &	Texture Class
	VCS 2-1.0	CS 1-0.5	MS 0.5-0.25	FS 0.25-0.05	VFS 0.1-0.05	TS	TSi 0.05-0.002	TC < 0.002	Stone, etc. > 2mm	
0- 8	.10	.08	.08	.91	8.42	9.58	69.60	20.82	None	Silt loam
8-14	.05	.08	.09	.03	6.41	6.66	67.85	25.49	None	Silt loam
14-21	.47	.34	.23	1.29	5.90	8.23	66.18	25.59	None	Silt loam
21-23.5	.47	.33	.32	1.55	6.91	9.58	75.92	14.50	None	Silt loam
23.5-30	.06	.14	.10	.47	3.68	4.45	49.37	46.18	None	Silty clay
30-34	.12	.24	.30	1.20	3.75	5.52	57.79	36.69	None	Silty clay loam
34-42	.16	.16	.17	.85	4.16	5.49	59.83	34.69	None	Silty clay loam
42-64	.13	.10	.09	.88	5.19	6.40	74.80	18.80	None	Silt loam